

Date: Wed, 29 Sep 93 04:30:19 PDT
From: Ham-Equip Mailing List and Newsgroup <ham-equip@ucsd.edu>
Errors-To: Ham-Equip-Errors@UCSD.Edu
Reply-To: Ham-Equip@UCSD.Edu
Precedence: Bulk
Subject: Ham-Equip Digest V93 #57
To: Ham-Equip

Ham-Equip Digest Wed, 29 Sep 93 Volume 93 : Issue 57

Today's Topics:

Can wrong freq element damage Bird wattmeter or element?
Car adapter spike problem.
HF Station
Morse Practice for Mac?
Regenerating PL tones thru a repeater. (3 msgs)
Seeking Alinco DR600/T Info
THANKS! Need good/cheap place to buy ferrite chokes
TR-2600A: PLL performance analysis
Trade 2 meter beam ant. for HF ant..
TS-930 Computer control available?
URC-32 Wattmeter Info
W21AT mods? Rxmods?
YAESU

Send Replies or notes for publication to: <Ham-Equip@UCSD.Edu>
Send subscription requests to: <Ham-Equip-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Equip Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-equip".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Tue, 28 Sep 1993 17:51:46 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!darwin.sura.net!udel!gvls1!
rossi@network.ucsd.edu
Subject: Can wrong freq element damage Bird wattmeter or element?
To: ham-equip@ucsd.edu

Can using the wrong frequency element [slug] in a Bird wattmeter
damage the element? Or the meter?

For example, if a VHF element was used on HF, sure you would expect the

the power level readings not to be accurate, but as long as the meter does not go off scale, is there any danger of damaging the element?

Would the forward/reverse ratios still be meaningful? In other words, could an accurate SWR reading be made even though the absolute power readings would be wrong because of the wrong frequency range element?

=====

Pete Rossi - WA3NNA

rossi@vfl.paramax.COM

Unisys Corporation - Government Systems Group
Valley Forge Engineering Center - Paoli, Pennsylvania

=====

Date: 28 Sep 93 18:56:16 GMT
From: ogicse!uwm.edu!math.ohio-state.edu!darwin.sura.net!RBSE.Mountain.Net!
wvnmms.wvnet.edu!un040333@network.ucsd.edu
Subject: Car adapter spike problem.
To: ham-equip@ucsd.edu

Has anyone had to deal with a problem like this:
I just bought an adapter to feed the speaker output jack of my HT into my car cassette player. I keep the volume on the HT low and use the adjustment on the radio. When the squelch kicks on or off there is a terrible spike that nearly blows out my speakers. I can adjust the cassette player volume down a little and the HT up to reduce it a little, but then I can't get any real volume out of the setup. I really want to get this to work since it makes listening about 10 times better. Any suggestions?

Please give any details you have. I am well acquainted with electronic design but would like a simple, quick fix if anyone has dealt with this.

Thanks alot!

Phil Plourde

Date: Mon, 27 Sep 1993 19:10:35 GMT
From: news.service.uci.edu!paris.ics.uci.edu!csulb.edu!library.ucla.edu!agate!
howland.reston.ans.net!spool.mu.edu!nigel.msen.com!ilium!rcsuna.gmr.com!kocrsv01!
c23glc@network.ucsd.edu
Subject: HF Station
To: ham-equip@ucsd.edu

I have a Yaesu FT-757 GX with Heavy Duty Power Supply and Desk Mic

and RS-232 serial interface and 10m ringo vertical antenna and
Tech' Manuals for \$800.00 for the works.

Will not separate!

The radio has been modified to TX on all RX freq's (Op's responsibility
to stay with in bands, this was done for testing items out of band but
not on the air).

I have used it to get DXCC on 10m and now my interest has changed to other
activities.

All are in good working order, excellent condition, and are not repaired units.

Cash on Pick-up or pre-paid with cost of shipping.

Cordially,

Gary Lee Calvert
P.O. Box 6353
Kokomo, Indiana 46904-6353
Ph 317-452-1314

* Gary Lee Calvert a.k.a. WB9SMX * Clever words of inspiration go here ! *
* Fatti Maschi Parole Femine * Witty proverbs, religious blessings here *
* c23glc@kocrsv01.delcoelect.com * Add any appropriate profound statments *
* This is a do-it-yourself, I'm to busy line * 1 * REDUCTIO AD ABSURDUM :^) *

--

Date: 27 Sep 1993 22:11:11 -0500
From: pacbell.com!sgiblab!swrinde!cs.utexas.edu!geraldo.cc.utexas.edu!
doc.cc.utexas.edu!not-for-mail@network.ucsd.edu
Subject: Morse Practice for Mac?
To: ham-equip@ucsd.edu

Hey, Im new to this most excellent group, and maybe not sure if this is the
EXACT group to post this question on (soon know, I guess tho!)..but

Does anyone know where I can find a Morse practice/training program that I
can use on the Mac? any FTP sites?

Ok thanx much!

red42..

Date: 28 Sep 93 13:03:48 GMT
From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu
Subject: Regenerating PL tones thru a repeater.
To: ham-equip@ucsd.edu

In article <CE1FF6.18u@ced.utah.edu> mladejov@ced.utah.edu writes:

>Hi

>Looking for some net.wisdom on how to regenerate one of several PL
>tones through repeaters. I am building several VHF repeaters, each of
>which needs to decode one of several PL tones, let's say 100.0, 110.9
>and 123.0Hz, and then if any of these three is detected (but not any
>other PL tone), it keys the transmitter, and enables the matching PL
>encoder so that the respective PL tone is passed out of the
>transmitter.

>

>Obviously this could be done with three or more PL decoders, and three
>or more PL encoders at each repeater site. I am looking for a solution
>where there is one general-purpose PL tone decoder, which is capable
>of determining of what tone is being sent "on the fly" (like a
>period-measuring freq counter), which produces an output which says
>which PL tone is being detected. (Kind of like a PL "scanner").

>

>I plan to interface this scanning PL decoder to a micro-computer, and key
>the transmitter only if the PL code matches one stored in a table. The
>regeneration could be taken care of by having the uP load a byte into
>the frequency determining register on a single gen-purpose PL encoder
>(ie, replace the dip switches with a latch).

>

>So, anybody have any ideas on how do do this short of buying three or
>more decoders and three or more encoders per site? Alternatively, how
>about a source of lots of cheap PL decoders, or a cheaply-reproduceable
>chip-based PL decoder based on an IC chip.

Well multiple decoders will give the fastest response time, but you
can program the microprocessor to *scan* the input by writing the
proper bit sequence to the decoder's dip switch. The only down side
to this is that you have to scan relatively slowly to allow the
decoder time to lock on any particular PL. This is a good application
for DSP. A FFT of the 50-150 Hz region of incoming audio will show
what PL is active. You might even get away with a simple zero crossing
detector following a low pass filter with a cutoff around 150 Hz.
Just do a period count, several times to avoid falsing, with the
microprocessor to determine the frequency of the incoming PL.

Gary

--

Gary Coffman KE4ZV	"If 10% is good enough	gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	for Jesus, it's good	uunet!rsiatl!ke4zv!gary
534 Shannon Way	enough for Uncle Sam."	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244	-Ray Stevens	

Date: 28 Sep 1993 17:55:01 GMT
From: nothing.ucsd.edu!brian@network.ucsd.edu
Subject: Regenerating PL tones thru a repeater.
To: ham-equip@ucsd.edu

You may wish to examine the MX-Com series of communications ICs. I don't recall the number offhand, but they have a subaudible signalling decoder chip that has a lookup table of PL frequencies that you can set, and it automatically decodes each of them. The microprocessor attached to the chip can determine which one of the frequencies is being used, and encode the appropriate tone on the transmitter.

For a less sophisticated approach, the community repeaters that I used to build used a simple set of tone decoders - the Com Spec boards, a predecessor to the TS-32 - and a simple low-pass filter that allowed anything less than say 150 Hz to pass through to the tone input of the transmitter. This was called a 'tone coupler'. It has the distinct advantage that the repeater doesn't have to have any special equipment to accomodate 'reverse burst' or 'chicken burst' squelch tail elimination.

Another approach is to simply use several TS-32 decoders and gate their outputs into a common mixing input. That's a bit pricy, but will work very well.

Finally, you might look around at the various used two-way radio dealers and see if you can find a "community repeater panel", which will be a bank of decoders and encoders that does exactly what you want. I've seen them for like \$25-\$50 at swapmeets for one that will do like 8 tones - which is really too few in today's commercial systems. Community repeaters are dying off and being replaced by SMR ("trunking systems") these days, so you might even be able to find a complete system you could use at a reasonable price.

- Brian

Date: Tue, 28 Sep 1993 16:55:51 GMT

From: agate!howland.reston.ans.net!gatech!kd4nc!n4tii@ames.arpa
Subject: Regenerating PL tones thru a repeater.
To: ham-equip@ucsd.edu

gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>In article <CE1FF6.18u@ced.utah.edu> mladejov@ced.utah.edu writes:

>>Hi

>>Looking for some net.wisdom on how to regenerate one of several PL
>>tones through repeaters. I am building several VHF repeaters, each of
>>which needs to decode one of several PL tones, let's say 100.0, 110.9
>>and 123.0Hz, and then if any of these three is detected (but not any
>>other PL tone), it keys the transmitter, and enables the matching PL
>>encoder so that the respective PL tone is passed out of the
>>transmitter.

>>

>>Obviously this could be done with three or more PL decoders, and three
>>or more PL encoders at each repeater site. I am looking for a solution
>>where there is one general-purpose PL tone decoder, which is capable
>>of determining of what tone is being sent "on the fly" (like a
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>>which PL tone is being detected. (Kind of like a PL "scanner").

>>

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>>more decoders and three or more encoders per site? Alternatively, how
>>about a source of lots of cheap PL decoders, or a cheaply-reproduceable
>>chip-based PL decoder based on an IC chip.

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>proper bit sequence to the decoder's dip switch. The only down side
>to this is that you have to scan relatively slowly to allow the
>decoder time to lock on any particular PL. This is a good application
>for DSP. A FFT of the 50-150 Hz region of incoming audio will show
>what PL is active. You might even get away with a simple zero crossing
>detector following a low pass filter with a cutoff around 150 Hz.
>Just do a period count, several times to avoid falsing, with the
>microprocessor to determine the frequency of the incoming PL.

Awwww Gary, you always have to be so technical..... here's how an appliance
operator would do it....

What this guy needs is a Community Repeater Panel. He didn't say whether or not it would be on the ham band...and chances are, if he's checking a list or something with a computer, he's interested in billing, etc...most likely, he's putting up a community repeater, or maybe a GMRS machine and he's selling tones on it. Anyway, Zetron and Communications Specialists both offer what he's wanting. You can program any number or tones for access and restrict many others...plus it has phone patch options, etc. The Zetron is very similar..... check those out, they might be what you're looking for.

John
n4tii%kd4nc.uucp@gatech.edu

>Gary

>--

>Gary Coffman KE4ZV	"If 10% is good enough	gatech!wa4mei!ke4zv!gary
>Destructive Testing Systems	for Jesus, it's good	uunet!rsiatl!ke4zv!gary
>534 Shannon Way	enough for Uncle Sam."	emory!kd4nc!ke4zv!gary
>Lawrenceville, GA 30244	-Ray Stevens	

Date: Tue, 28 Sep 1993 00:39:33 GMT
From: agate!usenet.ins.cwru.edu!magnus.acs.ohio-state.edu!csn!qwerty-
gw.fsl.noaa.gov!quent@ames.arpa
Subject: Seeking Alinco DR600/T Info
To: ham-equip@ucsd.edu

I'm looking for any info/comments/past postings concerning the Alinco DR600/T dual band mobile rig. The manual I have, "Advanced Users Instruction Manual", is pretty bad. I think the title should be "Feature Puzzle Book". There aren't any diagrams or connector pinouts and the explanations are very poor. Although I'm able to decode most of the manual, I feel like there may be features left out of the manual or described so poorly that they're hidden :-)

I'm particularly interested in hooking it to my KPC-3 TNC and whether there have been any mods or upgrades since it was introduced (which I think was fairly recent).

Quent Johnson (quent@md.fsl.noaa.gov)

--

Quent Johnson	Internet:	quent@md.fsl.noaa.gov
NOAA Forecast Systems Laboratory	On the air:	NOWCH
Modernization Division /~/\^/\^/\~	Boulder, Colorado	

Date: 28 Sep 1993 12:04:01 -0400
From: panix!not-for-mail@nyu.arpa
Subject: THANKS! Need good/cheap place to buy ferrite chokes
To: ham-equip@ucsd.edu

In <287co3\$inl@panix.com> jlee@panix.com (John Lee) writes:

>HI,

>I've posted this in rec.audio/rec.video and did not have much luck. Maybe
>I'll have better luck here.

>-----
>Does anyone knows a good(cheap :)) mail order place to get ferrite chokes?
>Radio Shack has the round cylindrical type for \$5 and rectangler snap
>together type for \$8 (for 2).

>I'll be using them for my stereo components'
>connects and speaker wires(to cut interference), so they should probably be
>at least 0.25" in inner diameter. I also have the catalog from Mouser, but
>the ferrite beads they have are too narrow in diameter to let a wire thru.

>Any suggestions/comments relating to this is welcome.

>Thanks in advance.

>John
>jlee@panix.com

=====
Thanks to all of you that replied.

John
jlee@panix.com

Date: 28 Sep 1993 19:22:25 GMT
From: swrinde!elroy.jpl.nasa.gov!usc!howland.reston.ans.net!spool.mu.edu!olivea!
korie!newscast.West.Sun.COM!sunspot!myers@network.ucsd.edu
Subject: TR-2600A: PLL performance analysis
To: ham-equip@ucsd.edu

For giggles, I decided to evaluate the PLL in my Kenwood TR-2600A HT.

I used the Kenwood TR-2600A service manual and Motorola MC14155 data sheet to determine the various arcane numbers I use.

The low pass filter used is the damped RC filter presented as filter "B" in the MC145155 data sheet. The response of this filter is:

$$F(s) = (t_2*s + 1)/(t_1*s + 1)$$

$$t_1 = (R_1 + R_2)*C$$

$$t_2 = R_2*C$$

$$C = 2.2\mu F$$

$$R_1 = 10K$$

$$R_2 = 470$$

The phase detector gain (K_p) is equal to $V_{dd}/4*\pi$. The Service Manual shows 5.7V as the typical V_{dd} ; hence $K_p = 5.7/(4.0*\pi)$.

The VCO gain (K_v) is suggested by the tuning instructions on page 33 of the Kenwood manual. This shows a minimum control voltage of 1.4V when operating at 140.000Mhz and a maximum of 5.2V when operating at 149.995MHz. This gives $K_v = (2*\pi*9.995\text{Mhz})/(5.2V-1.4V)$.

Since the reference frequency is 5KHz, $N=f/5\text{Khz}$. For a mid-band 146MHz transmit frequency, $N = 29200$.

Using the Motorola supplied equations:

$$\omega_n = \sqrt{(K_v*K_p)/(N*C*(R_1+R_2))} \text{ or } 105.57 \text{ rad/sec (16.8Hz).}$$

$$\text{damping} = 0.5*\omega_n*(C*R_2+N/(K_p*K_v)) \text{ or } 0.260$$

The rather low damping factor suggests this PLL will be somewhat unstable after a frequency change. Sure enough, when I push PTT, the HT starts transmitting with a ker-chunking noise on the transmitted audio. Looking at the audio on a receiver with a scope shows the ringing PLL characteristic.

I wonder why Kenwood underdamped the PLL so seriously. More damping would result in slower response to frequency change, but the PLL takes so long to settle down I'm not sure it is worth it. I can't help but wonder if the filter was changed in production to reduce the amount of time it takes the radio to lock-up at the expense of allowing a significant ringing each time PTT is pushed. This ringing causes the radio to generate a "click" in a sharp receiver tuned to an adjacent channel.

* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are

*
 * (310) 348-6043 | mine and do not necessarily *
 * Dana.Myers@West.Sun.Com | reflect those of my employer
 *
 * This Extra supports the abolition of the 13 and 20 WPM tests *

 Date: Tue, 28 Sep 1993 05:21:42 GMT
 From: dog.ee.lbl.gov!agate!library.ucla.edu!news.ucdavis.edu!
 bullwinkle.ucdavis.edu!szhall@network.ucsd.edu
 Subject: Trade 2 meter beam ant. for HF ant..
 To: ham-equip@ucsd.edu

I have a 2 meter 10 element stacked beam which to trade for a HF ant. I
 live in Davis, California so we must be close enough to trade by without
 having to ship the ant..Tns..73es..Jeff

 Date: 28 Sep 1993 12:28:27 GMT
 From: swrinde!elroy.jpl.nasa.gov!avdms8.msfc.nasa.gov!sauron!sims@network.ucsd.edu
 Subject: TS-930 Computer control available?
 To: ham-equip@ucsd.edu

Well, the contest time is rolling around, and I was just wondering
 if anyone out there knows of anyone who has designed and built
 a hack for the kenwood ts-930s radio to allow computer interface?

Please e-mail direct.

Thanks,

Herb

 W. Herb Sims sims@sauron.msfc.nasa.gov
 KU0C sims@saruman.msfc.nasa.gov
 MSFC/NASA/EB56 sims@avdms8.msfc.nasa.gov
 Huntsville, AL 35812 PP-ASEL-IA

_#	**Mmp	g#00	`N##0"	_agN#0P0N#	_#L
g##	jN##	j##F	J##	_dN0"	"
_#]##	_0 ##L	jN##F	###	g#0"	_03##L
gE_j##	# 0## jF	##F	j##F	j##	_____
_0""N##	d" J##L0	##F	0##	0##	"9##F"
_gF]##	jF ##0	##F	##F	`##k	d##
g# _j##L_g#_]N _j##L_	_d##L_	`#Nh_g#N'	_g#_ _j##L_	
`" ""	" " " " " "	" " " " " "	" " " " " "	" " " " " "	" " " " " "

Date: 28 Sep 93 16:00:51 GMT
From: ogicse!uwm.edu!cs.utexas.edu!geraldo.cc.utexas.edu!nuntius@network.ucsd.edu
Subject: URC-32 Wattmeter Info
To: ham-equip@ucsd.edu

I'm interested in information on a URC-32 wattmeter made by Collins
and part
of a military surplus antenna tuning unit.
Barry Newberger, W5KH
Inst. for Fusion Studies, UT-Austin
Austin, TX 78712-1060
tel (512) 471-3726
fax (512) 471-6715

Date: 27 Sep 1993 22:14:29 -0500
From: pacbell.com!sgiblab!swrinde!cs.utexas.edu!geraldo.cc.utexas.edu!
doc.cc.utexas.edu!not-for-mail@network.ucsd.edu
Subject: W21AT mods? Rxmods?
To: ham-equip@ucsd.edu

Anyone know if Icom's W21AT can be mod'ed to TX on the same freqs as the RX? Is
this a dumb question? Can it be mod'd just for the air bands? (118-130mhz)?
73 red42

Date: 28 Sep 1993 13:08:18 GMT
From: swrinde!gatech!howland.reston.ans.net!darwin.sura.net!haven.umd.edu!cville-
srv.wam.umd.edu!ham@network.ucsd.edu
Subject: YAESU
To: ham-equip@ucsd.edu

I have noticed that there is a trend of late. "ICOM" is spelled

I-C-O-M.

KENWOOD is spelled

K-E-N-W-O-O-D

ALINCO is spelled

A-L-I-N-C-O

while, on the other hand, 4 out of 5 users of ham equipment say

YAESU is spelled

Y-E-A-S-U or Y-A-S-E-U or Y-A-S-U-E

Look people, it's a guy's name, and I'm sure when he named the company, he pictured people spelling his name right...

Y----A----E----S----U.

Yes, I'm nit-picking, no, I don't intend any hard feelings, and if I cause any, it's because you realize you haven't been spelling it right and you don't like people correcting you.

Guess I'll go hop into my Crysler :-) and go for a ride.
Anyone have a Cheby :-)?

Scott NF3I

--

73,

----- The
 \ / Long Original
Scott Rosenfeld Amateur Radio NF3I Burtonsville, MD | Live \$5.00

WAC CW/SSB WAS 95% of the way to DXCC _____| Dipoles! Antenna!

Date: Tue, 28 Sep 1993 12:49:23 GMT

From: swrinde!cs.utexas.edu!csc.ti.com!tilde.csc.ti.com!mksol!

mccall@network.ucsd.edu

To: ham-equip@ucsd.edu

References <5895@eagle.ukc.ac.uk>, <1993Sep24.152515.24784@unocal.com>,
<1993Sep24.203910.19506@enterprise.rdd.lmsc.lockheed.com>~5

Subject : Re: help on GPS

Lowell Specht (g584741@loads1.lasc.lockheed.com) wrote:

: In article <1993Sep24.152515.24784@unocal.com>, stgprao@st.unocal.COM (Richard Ottolini) writes:

: >

: > (P.S. This is the 3rd posting on I-am-too-lazy-to-do-the-research-

: > myself-so-lets-pester-the-net I've seen today. Usually doesn't

: > happen until end of term deadlines.)

: The Internet is an information network and as valuable a resource as the
: library. It's too bad there are people out there who don't appreciate
: this.

'The Internet' (presuming the existence of such a single entity for a
moment) is no such thing. It is merely a network of networks.
Posting simple questions to the net consumes the time of thousands of
people who receive them. It's too bad there are people out there who
don't appreciate this and continue to regard the network as some kind
of private reference library, where everyone else's time should be
theirs for the demanding. This is even worse when simple questions
are crossposted to multiple groups, as was the case here.

Followups redirected.

--

"Insisting on perfect safety is for people who don't have the balls to live
in the real world." -- Mary Shafer, NASA Ames Dryden

Fred.McCall@dseg.ti.com - I don't speak for others and they don't speak for me.

End of Ham-Equip Digest V93 #57
